We claim:

1. A catalyst useful for synthesis of 2- and 4- Picolines which comprises a heteropoly acid selected from the group consisting of silicotungstic acid, phosphotungstic acid, phosphomolybdic acid and vanadotungstic acid provided on a support.
2. A catalyst as claimed in claim 1 wherein the support is selected from the group consisting of silica gel, alumina, silica-alumina, clays and montmorillonite.
3. A process for the preparation of a catalyst useful for the synthesis of 2- and 4-picolines, the process comprising dissolving a heteropoly acid in distilled water; mixing the resulting mixture with desired amount of a binder to obtain a slurry; stirring the slurry till uniform impregnation is achieved; drying the slurry in air at 200-250°C for a time period in the range of 0.5 to 1.5 hours; further heating the slurry at a temperature in the range of 300 to 400°C for time period in the range of 0.5 to 1.5 hours and cooling the resultant product to room temperature in a desiccator to get the desired catalyst.
4. A process as claimed in claim 3 wherein the heteropolyacid is selected from the group consisting of silicotungstic acid, phosphotungstic acid, phosphomolybdic acid and vanadotungstic acid.
5. A process as claimed in claim 3 wherein the binder is selected from the group consisting of silica, alumina, silica-alumina, clays and montmorillonite.
6. A process as claimed in claim 3 wherein the heteropoly acid is dissolved in distilled water in a ratio of 0.5:4.5 (w/w).
7. A process as claimed in claim 3 wherein the binder comprises silica gel of mesh size 6-14.
8. A process as claimed in claim 3 wherein the slurry is stirred for a time period in the range of 30-40 minutes.
9. A process for the preparation of 2- and 4- picolines which comprises reacting acetaldehyde and ammonia under heat in the presence of a catalyst comprising a composite of a heteropolyacid impregnated on a support, the catalyst being present in an amount in the range of 5 to 15 wt %, and separating the 2- and 4- picoline formed.
10. A process as claimed in claim 9 wherein the acetaldehyde and ammonia are taken in a ratio of 0.8 to 1.2 (w/w) and are reacted at a temperature in the range of 300 to 500°C.
11. A process as claimed in claim 9 wherein the reaction is carried out in a glass reactor.
12. A process as claimed in claim 9 wherein weight hourly space velocity of the acetaldehyde and ammonia is maintained in the range of 0.1 to 10 g/g of catalyst.

13. A process as claimed in claim 12 wherein the weight hourly space velocity of the acetaldehyde and ammonia is maintained in the range of 1 to 3 g/g of the catalyst.

14. A process as claimed in claim 9 wherein the the 2- and 4-picolines are separated by fractional distillation.

15. A process as claimed in claim 9 wherein the heteropolyacid is selected from the group consisting of silicotungstic acid, phosphotungstic acid, phosphomolybdic acid and vanadotungstic acid.

16. A process as claimed in claim 9 wherein the binder is selected from the group consisting of silica, alumina, silica-alumina, clays and montmorillonite.

17. A process as claimed in claim 9 wherein the binder comprises silica gel of mesh size 6-14.